

Application No. 10/758,817
Office action response dated October 23, 2008
Responsive to Office Action Dated August 21, 2008

REMARKS

The Examiner is thanked for the examination of this application, and for his reconsideration of the present amendments to the claims. Claims 1 and 6 have been amended to more clearly define the scope of the claimed invention. No new matter is presented by these amendments. Reconsideration in light of these amendments and the following remarks is respectfully requested.

REJECTIONS UNDER 35 USC 103

Claims 1 and 3-32 were rejected under 35 USC § 103(a) as being unpatentable over Gvili et al. (Depth Keying, SPIE Vol. 5006(2003)) in view of Parker (US 7,106,366).

Regarding Claim 1, the Office states that Gvili discloses adjusting image capture device parameters according to bit values of the depth mask. However, in the Office Action dated March 9, 2007, it was admitted that “Gvili does not explicitly disclose the step of adjusting image capture device parameters according to bit values of the depth mask” (see page 6 of the Office Action).

Nonetheless, reference is made to page 567, lines 7-11 of Gvili, which describes the calculation of a normalized depth of a pixel $D(i,j)$. Applicant fails to see how the calculation of the normalized depth of a pixel is the equivalent of adjusting image capture device parameters according to bit values of a depth mask.

The Office additionally cites other portions of Gvili as disclosing the image capture device parameters of focus, brightness, exposure, or gain. However, these

Application No. 10/758,817
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additionally cited portions do not disclose adjustment of the parameter according to bit values of a depth mask, either.

Regarding focus, reference is made to page 568, line 2 of Gvili, which pertains to a lens which may be zoomed if so desired. It is respectfully submitted that the ability to zoom is not the same as the image capture device parameter of focus as claimed, much less its adjustment according to bit values of a depth mask.

Regarding brightness, the Office refers to page 567, line 5 of Gvili, which teaches the collected light by each pixel being inversely proportional to the depth of the specific pixel. The disclosure of the collection of light by pixels is not the equivalent of the adjustable parameter of brightness, much less its adjustment according to bit values of a depth mask.

Regarding exposure, reference is made to page 567, line 18, which discloses a solid-state shutter for controlling the exposure time of a CCD. However, no mention is made of the exposure time being adjusted in any way in relation to the bit values of a depth mask.

Regarding gain, the Office again refers to page 567, line 18, which pertains to the normalized depth of a pixel. Applicant fails to see how normalized depth is the same as adjustable gain as claimed, much less its adjustment according to the bit values of a depth mask.

In sum, the Office has not provided a prior art reference which discloses adjustment of focus, brightness, exposure, or gain according to bit values of a depth mask, as claimed in the present application. For at least these reasons, it is respectfully

Application No. 10/758,817
Office action response dated October 23, 2008
Responsive to Office Action Dated August 21, 2008

submitted that the presently claimed invention is patentable over the teachings of the cited art.

The Office admits that Gvili does not teach adjustment of the image capture device parameters being done independently in the foreground from the background. For this, the Office relies on the Parker reference. Specifically, the Office cites the following: (1) digital image data outputs from sensor signal processing operation 204 for calculation of belief map 209 (at Figure 3), and (2) the main subject detection unit 208 having a number of subtasks including region segmentation, perceptual grouping, feature extraction, and probabilistic reasoning for the subjects in the foreground (5:14-67 and Figs 2a, 2b, 2c, and 3). However, none of the cited portions of the Parker reference teach the adjustment of image capture device parameters being done independently in the foreground from the background, as claimed by the Applicant.

According to Parker, the digitized data resulting from an image capture is “processed by sensor signal processing operation 204 to produce digital image data 205,” which is then “compressed by an image compressor 206 to produce compressed digital image data 207.” (Col.4, lines 9-15.) It is important to note that the “compressed digital image data 207” as disclosed by Parker represents the final captured image which is meant to be displayed. This is readily apparent because “other processes generate additional information... *to facilitate future transcoding* of the compressed digital image data 207.” (Col. 4, lines 16-20, emphasis added.) Indeed, the additional information, which is based on a compression of the belief map, is merely “associated with compressed digital image data 207... to form an enhanced compressed digital image

Application No. 10/758,817
Office action response dated October 23, 2008
Responsive to Office Action Dated August 21, 2008

219.” (Col. 4, lines 30-32, 48-50.) In other words, no actual adjustment of the digital image is performed at the time of capture, as the additional information is merely “associated” with the image itself.

In contrast, Applicant’s amended claim 1 is directed towards adjustment of image capture device parameters according to bit values of a depth mask for one or more of a sequence of captured image frames. Support is found in the specification as filed, and by example, at page 10, lines 19-22. Thus, one or more of the captured image frames will incorporate or result from the adjustment of the image capture device parameters.

Moreover, the Parker reference does not actually teach adjustment of image capture device parameters as claimed in the present application. The cited portions of Parker refer to a “main subject detection unit 208” which apparently may include various analytical subtasks which are utilized in the generation of a belief map. The generation of a belief map based upon analytical processes is not the equivalent of adjusting image capture device parameters as claimed, let alone the adjustment of the specific parameters of focus, brightness, exposure, or gain. At most, Parker teaches the use of a belief map for recompression of a compressed digital image to a lower bit-rate when circumstances of insufficient bandwidth arise. (Col. 9, lines 60-65.) It is respectfully submitted that the recompression of an already finalized digital image due to bandwidth considerations is quite dissimilar from the aesthetically-oriented adjustment of parameters such as focus, brightness, exposure, or gain.

For at least these reasons, it is believed that Applicant’s claim 1 is patentable over the cited art. Likewise, claims 2-4 and 6-8 are patentable at least in view of their dependence from claim 1. Withdrawal of the rejections is respectfully requested.

Application No. 10/758,817
Office action response dated October 23, 2008
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Regarding claim 9, the Office cites the Parker reference as disclosing adjustment of pixel values associated with the foreground region independent of adjustment of pixel values associated with the background region. However, in support of this assertion, the Office mischaracterizes the main subject detection unit 208 as adjusting pixel values. In fact, as previously discussed, the main subject detection unit 208 does not actually adjust pixel values in any meaningful sense. The main subject detection unit 208 merely applies a number of analytical subtasks to a finalized image, thereby generating data that is utilized to construct a belief map. Thus, Parker does not disclose the independent adjustment of pixel values, as claimed in the present application.

For at least these reasons, claim 9 is believed to be patentable over Gvili in view of Parker. Likewise, claims 10-11 and 13-15, are patentable at least in view of their dependence from claim 9. Withdrawal of the rejections is respectfully requested.

Regarding claim 17, the Office generally provides the same grounds for rejection as applied to claim 9. Thus, claim 17 is believed to be patentable for at least the reasons cited above regarding claim 9. Likewise, claims 18-24 are patentable at least in view of their dependence from claim 9. Withdrawal of the rejections is respectfully requested.

Regarding claim 25, the Office generally provides the same grounds for rejection as applied to claim 1. Thus, claim 25 is believed to be patentable for at least the reasons cited above regarding claim 1. Likewise, claims 26-32 are patentable at least in view of their dependence from claim 1. Withdrawal of the rejections is respectfully requested.

Application No. 10/758,817
Office action response dated October 23, 2008
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In light of the clarifying amendments to the claims, and the foregoing remarks highlighting the differences between the claimed invention and the teachings of Gvili et al. and Parker, the Applicant respectfully requests the Office to withdraw the Section 103 rejection. The dependent claims are also submitted to be patentable, for at least the same reasons as the independent claims are believed to be patentable.

In view of the foregoing, Applicants respectfully submit that all of the pending claims are in condition for allowance. A notice of allowance is respectfully requested.

In the event a telephone conversation would expedite the prosecution of this application, the Examiner may reach the undersigned at **(408) 774-6903**. If any fees are due in connection with the filing of this paper, then the Commissioner is authorized to charge such fees to Deposit Account No. 50-0805 (Order No. SONYP031). A copy of the transmittal is enclosed for this purpose.

Respectfully submitted,
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